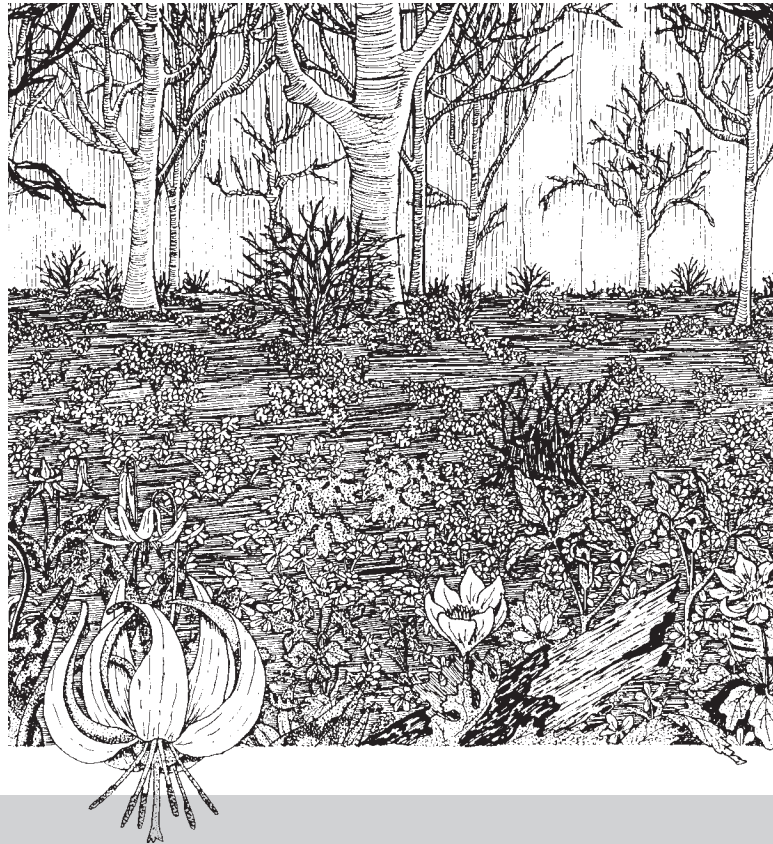


Iowa Association of Naturalists

Iowa's Plants



**Iowa's Spring
Wildflowers**



Iowa Association of Naturalists

The Iowa Association of Naturalists (IAN) is a nonprofit organization of people interested in promoting the development of skills and education within the art of interpreting the natural and cultural environment. IAN was founded in 1978 and may be contacted by writing the Conservation Education Center, RR 1, Box 53, Guthrie Center, IA 50115.

Iowa's Plants Booklet Series

Plants are a beautiful and important part of nature in Iowa. To assist educators in teaching their students about the common plants of Iowa, the Iowa Association of Naturalists has created a series of booklets which offer a basic, understandable overview of Iowa's plants, their ecology, and their benefits and dangers to people. The seven booklets in this series include:

- Iowa's Spring Wildflowers** (IAN-301)
- Iowa's Summer and Fall Wildflowers** (IAN-302)
- Benefits and Dangers of Iowa Plants** (IAN-303)
- Iowa's Trees** (IAN-304)
- Seeds, Nuts, and Fruits of Iowa Plants** (IAN-305)
- Iowa's Mushrooms and Nonflowering Plants** (IAN-306)
- Iowa's Shrubs and Vines** (IAN-307)

For ordering information about these and other IAN publications, please see the back cover of this booklet.



The Iowa Plants booklet series is published by the Iowa Association of Naturalists with grants from the REAP Conservation Education Board and the Iowa Conservation Education Council (ICEC), 1994.



Review Committee

- Cele Burnett, Environmental Education Coordinator, Story County Conservation Board
- Dan Cohen, Naturalist, Buchanan County Conservation Board
- Jean Eells, Environmental Education Coordinator, Hamilton County Conservation Board
- Judy Levings, State 4-H Youth Development Specialist, Iowa State University
- Stacey Snyder Newbrough, Freelance Naturalist and Librarian, Pocahontas, Iowa
- Jim Pease, Extension Wildlife Specialist, Iowa State University
- Diane Pixler, Naturalist, Marshall County Conservation Board

Editorial Board

Text: Dan Cohen
Illustration: Mark Müller
Layout and Design: MJC Associates, Ankeny, Iowa
Published by: Iowa Association of Naturalists

Iowa's Spring Wildflowers

Looking at a Wildflower

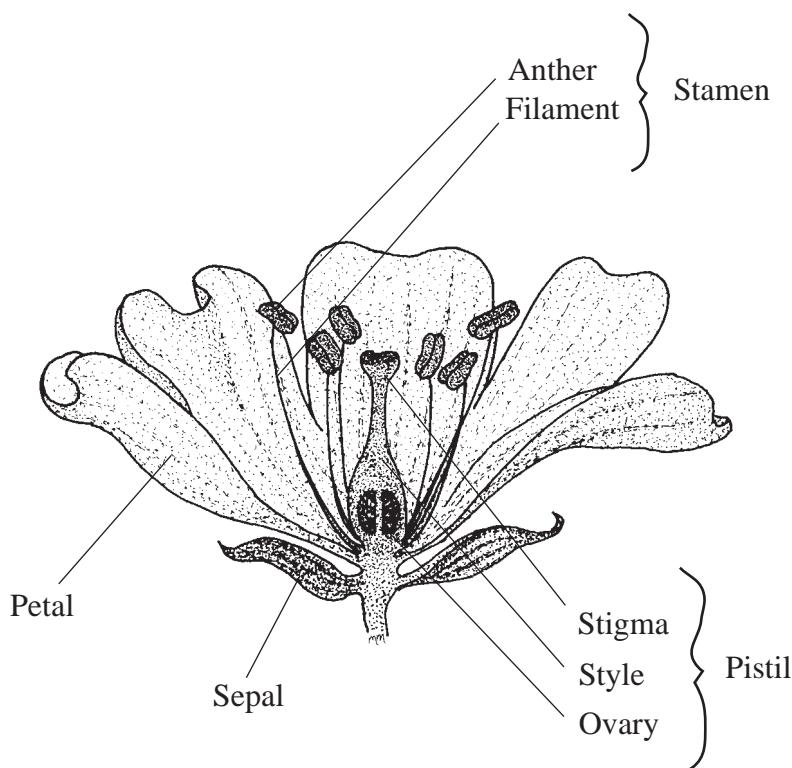
Flowers are a beautiful part of the life cycle of seed-producing plants. The colors of wildflowers attract birds and insects, and through this attraction plants are pollinated and seeds are dispersed. People are also attracted to wildflowers. Each year we await the return of the colorful wildflowers of

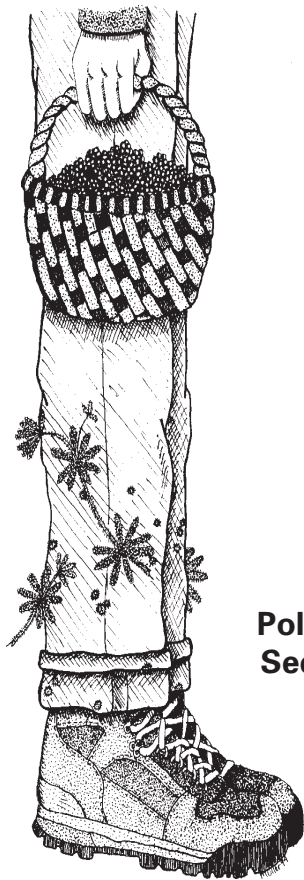
spring as a sign that the black and white days of winter have ended.

A flower is composed of many parts, each playing a role in the process of producing seeds. Flowers may be arranged on plants in many different ways. Some plants, like May apple, have a **single flower**. Most plants, such as wild geraniums and Jacob's ladder, have **clusters** of flowers.

The actual reproductive parts of the flower are the **pistils**, which contain the ovaries, and the pollen-producing

anthers at the tip of each **stamen**. **Pollination** occurs when pollen is carried to a pistil. If pollination is successful, one or more **seeds** begin to develop within the pistil. Some flowers, such as trout lilies, have large stamens, anthers, and pistils that can be useful in identifying the plant. In other flowers, pistils and stamens are hardly noticeable.





**Pollination and
Seed Dispersal**

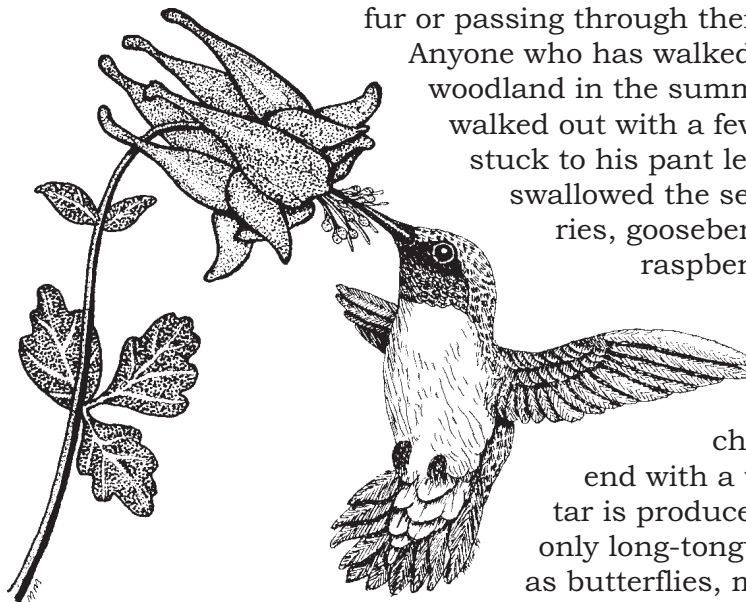
For many flowers the most colorful and noticeable parts are the **petals**. These showy structures usually surround the reproductive parts and are often useful in attracting pollinating animals such as birds and insects. Behind the petals a flower usually has nonshowy **sepals**. Sometimes petals and sepals are difficult to distinguish and are collectively called **tepals**. The colorful petals of most spring wildflowers last a short time.

Spring wildflowers represent a large variety of flowers. The most common plant families are *Ranunculaceae*, also called the buttercup family, and *Rosaceae*, the rose family. The buttercups have five or more petals, petal-like sepals, many stamens, and alternate leaves. Members of the rose family are similar to the buttercups, but their five joined sepals form a distinct cup or disc that seems to hold the flower. To learn more about the different plant families of spring wildflowers and their identifying characteristics, consult a good botany book or field guide.

Plants have adapted several strategies for spreading their pollen to other plants and their seeds to new places. Pollen may be carried by the wind or on the hairs, beaks, or bodies of animals. Seeds may be carried by wind or water, on the fur or in the mouths of animals, or through animal bodies.

Spring wildflowers are often found in woodlands, where a lack of wind often makes pollination a more important job for insects and birds. Seeds are usually spread by birds and mammals, attaching to fur or passing through their digestive systems.

Anyone who has walked through an Iowa woodland in the summer has probably walked out with a few seeds of bedstraw stuck to his pant legs and may also have swallowed the seeds of wild strawberries, gooseberries, and black raspberries.



Some flowers “choose” their pollinators. Columbine has long, chambered petals that end with a thin spur. The nectar is produced in the spur and only long-tongued pollinators such as butterflies, moths, and hummingbirds can reach down the spur to collect the nectar.

Spring Blooming in Iowa Woodlands: The Race Is On

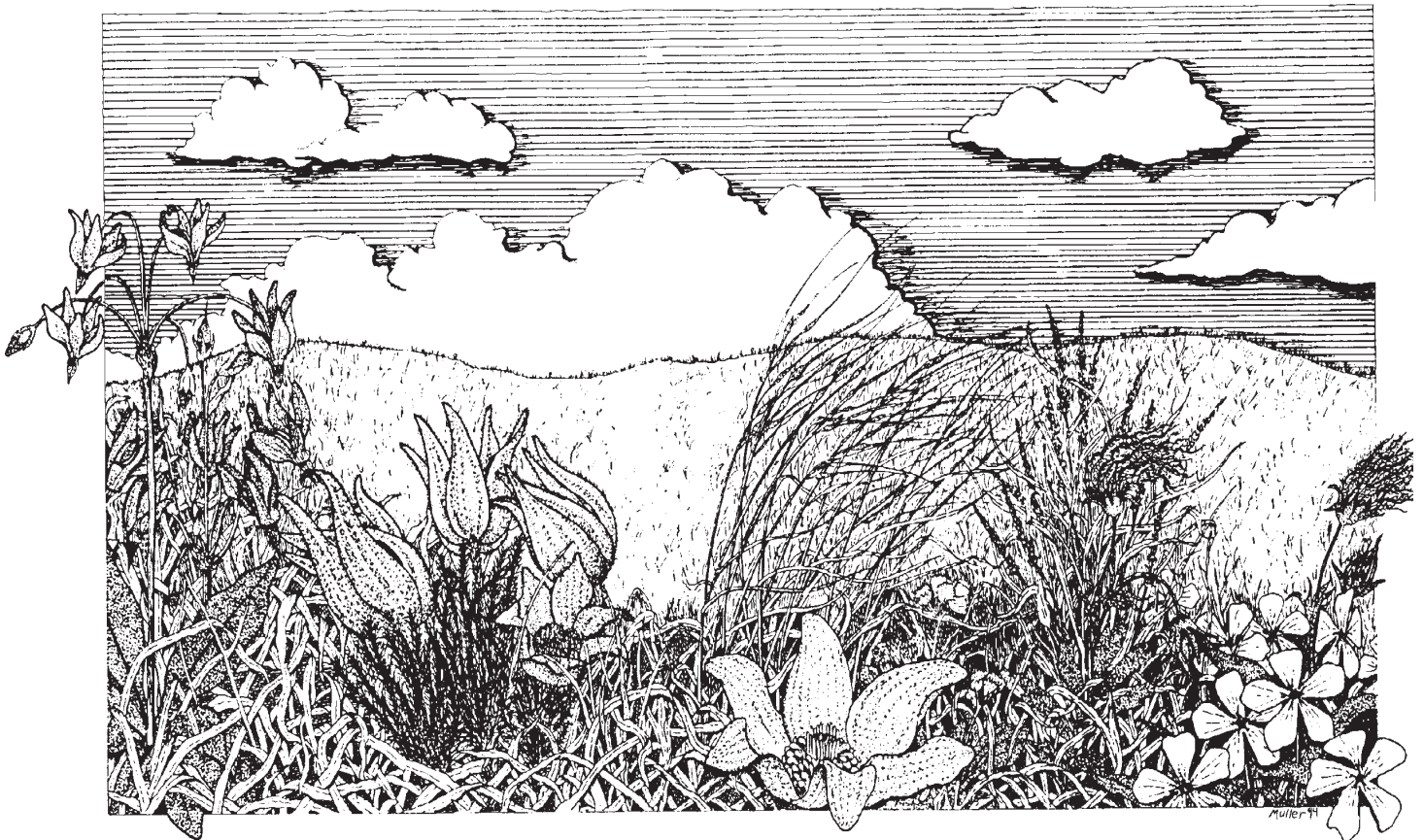
Spring wildflowers are most numerous and most colorful in Iowa woodlands. In early spring, the woodland comes to life as small patches of color poke up through the litter of dead leaves and fallen twigs. These first flowers of early spring, called **ephemerals**, are some of the most beautiful of the woodland flowers. The word ephemeral means "short-lived" and refers to the blossoms of spring wildflowers which begin to fall almost as soon as they bloom. Ephemerals such as bloodroot, hepatica, trillium, trout lily, and Dutchman's breeches bloom before the big trees form their thick canopies that shade the woodland floor. They are the leaders in a race against the trees to bloom, become pollinated, and make seeds before the tree leaves block the sunlight. Other spring ephemerals in Iowa woodlands include spring beauty, Virginia bluebells, and anemone. One of the first plants to bloom in the woodlands and wetlands of northeast Iowa is skunk cabbage. This somewhat rare plant produces its own heat that helps it emerge through the remaining patches of snow as early as mid-February. As its name implies, skunk cabbage has a foul odor that attracts pollinating flies and ground beetles.



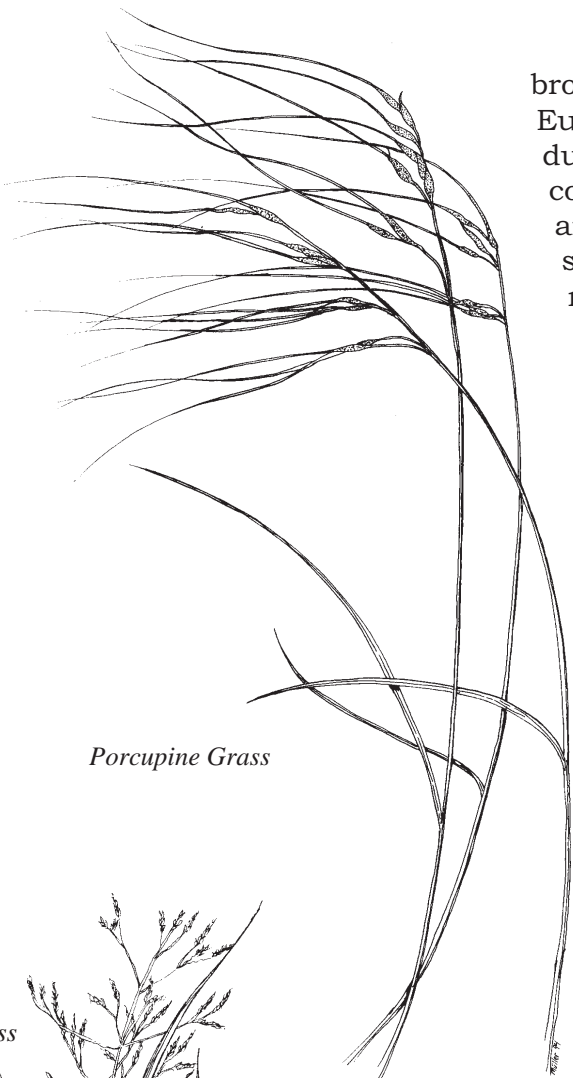
Spring in the Grasslands

In early spring the parade of prairie flowers is just beginning. Most grassland flowers bloom later in the summer when the days are longer and the sun is higher. However, some of the most memorable prairie flowers start the show as early as March. At the same time the meadowlarks return to the fields, the first pasque flowers bloom in some of Iowa's few remaining prairies. They are soon joined by a handful of other early bloomers, including shooting star, prairie smoke, prairie phlox, and pussytoes.

Among our native grasses that flower and begin producing seeds in the spring are bentgrass, June grass, and porcupine grass. These grasses are called "cool-season" grasses because they reach their peak before the warmer days of midsummer. Historically, cool-season grasses were not as common in Iowa as were the warm-season prairie grasses. However, many cool-season grasses have been



brought to our state since the time of European settlement. These “introduced” grasses, in many cases, have come to dominate the landscape. Examples of these now-common cool-season grasses are brome grass, meadow foxtail, orchardgrass, Russian wildrye, tall fescue, reed canarygrass, timothy, and Kentucky bluegrass.



Porcupine Grass



Bent Grass



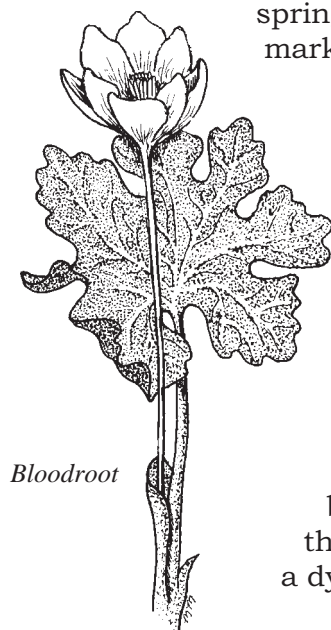
June Grass

Iowa's Spring Wildflowers

The Ephemerals (Blooming in March and April)

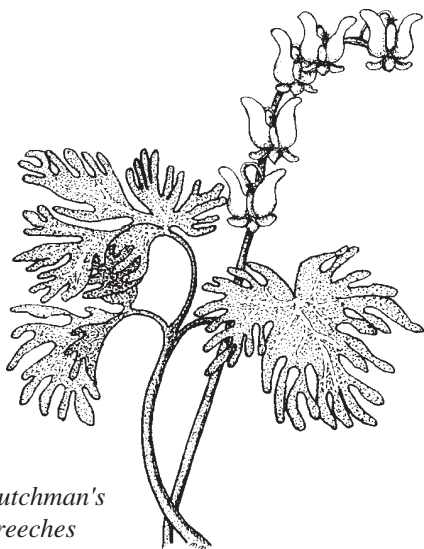
The following are brief descriptions of some of the more common Iowa spring wildflowers. To find out more about these and other spring wildflowers of Iowa, refer to a field guide.

As the snow melts, a variety of small wildflowers rises from the woodland ground. These first flowers of spring are the ephemerals and bloom for a very short period of time. Some ephemerals, such as bloodroot and Dutchman's breeches may bloom for only a day or less. In addition to the flowers described below, watch for the arrival of anemones, spring beauty, trout lily, and other flowers that mark the arrival of spring.



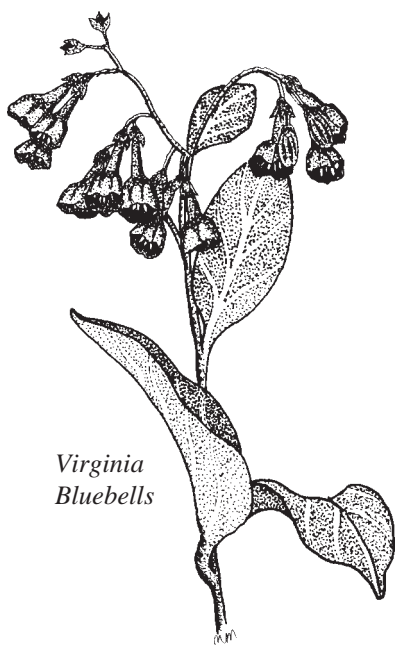
Bloodroot

Bloodroot (*Sanguinaria canadensis*) is a low-growing wildflower which is easily identified by having one broad basal leaf which wraps around the flower's stem. The flower is white with many petals that may last only a day. Bloodroot gets its name from a red liquid in the plant's root. When the root is broken, the liquid oozes out and has the appearance of blood. Although poisonous if swallowed, the root has been used as facial paint and as a dye.

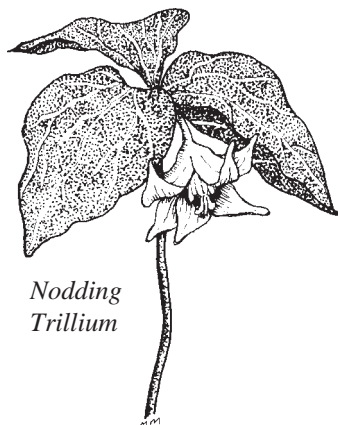


Dutchman's
Breeches

Dutchman's breeches (*Dicentra cucullaria*) is easy to identify. As its name implies, individual blossoms resemble a pair of pants or "breeches" hanging upside down from a slender flower stalk. The breeches are white and sometimes tinged with pink. They are attached to the flower stalk at the crotch by a delicate flower stem. The leaves are frilly or fernlike and grow underneath the arching flower stalk. Squirrel corn (*Dicentra canadensis*) is very similar in appearance to Dutchman's breeches. Both flowers are closely related to the garden flower bleeding heart.



Virginia
Bluebells

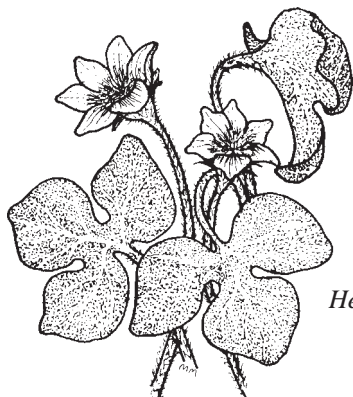


Nodding
Trillium

Virginia bluebells (*Martensia virginica*) grow in woodlands throughout Iowa. The common name describes the flared, trumpet-shaped flowers which range in color from sky blue to azure. The plant may grow to a height of two feet on a weak boughed stem. Long oval leaves grow alternately along the plant stem. Pollination occurs when an insect, usually a bee, pokes through the flower to reach the nectar at the tip of the “bell.” In Iowa, bluebells bloom from March through May.

Nodding trillium (*Trillium cernuum*) is a beautiful, delicate flower. The name trillium refers to the flower parts grouping in threes. The flower has three white petals, three green sepals, six stamens, and three ovaries. Three large leaves, from four to six inches long, form an umbrella over the plant, similar to Jack-in-the-pulpit. Nodding trilliums have their blossoms hanging downward, “nodding” beneath the three green leaves. Other trilliums, including snow trillium and large white trillium, also have flower parts arranged in threes but do not have blossoms that nod beneath the leaves. Trilliums bloom in moist woodland soils from April through June.

Hepatica (*Hepatica americana*) is often the first flower to appear in Iowa woodlands. The flowers are purplish white and rarely rise more than six inches from the woodland floor. The plant gets its name, which means “affecting the liver,” from the color and shape of the leaves as they persist throughout fall and winter. Hepatica is a member of the buttercup family, characterized by having many petals, stamens, and pistils. The flowers begin blooming as early as March and may continue blooming throughout the spring months.



Hepatica

Wildflowers of May and June

April showers bring May flowers, successors of the ephemerals, which carpet woodland floors. In addition to the woodland flowers described below, watch for Jacob's ladder, bellwort, wild ginger, but-tercups, and others.

Woodland Wildflowers



Wild Geranium

Wild geraniums (*Geranium maculatum*) are found throughout Iowa, often carpeting woodland floors in May and June. Clusters of purple flowers, from one to two inches in diameter, grow on weak flower stalks that attach to an erect stem. Each flower has five petals and five thinner green sepals. The plant may be two feet tall with characteristic lobed leaves that help to identify it before the flowers bloom.

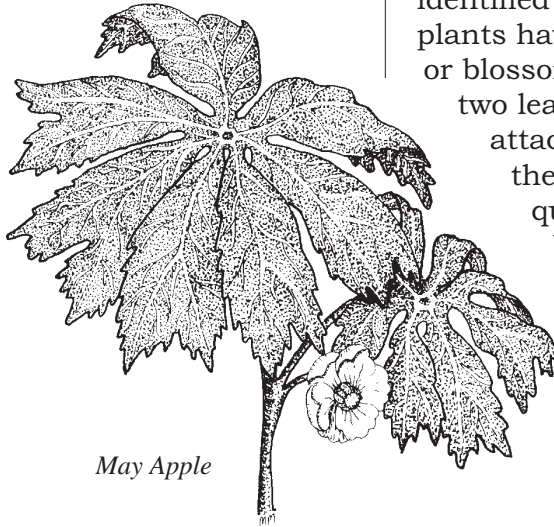
Virginia waterleaf (*Hydrophyllum virginianum*) is a common wildflower of moist shady woodlands. Clusters of purplish or white flowers make the plant very visible from late May to early July. Five stamens protrude from each blossom and give the flower a “hairy” appearance. Leaves are broadly triangular and may be doubly lobed. The surface of the leaves is often marked with spots that resemble water droplet stains.



Virginia Waterleaf

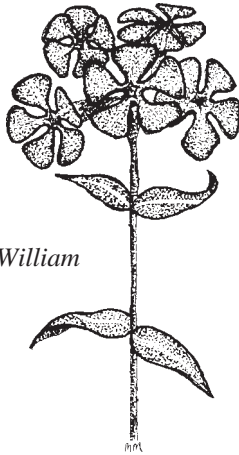
Columbine (*Aquilegia canadensis*) grows throughout the state and is especially common on woodland slopes. Bright red flowers are divided into five tubes or compartments with long stamens hanging down from the center of the flower. Only hummingbirds, moths, and butterflies are able to reach into the flower compartments to drink the nectar and pollinate the flower. The plant may resemble a small shrub growing to two feet or more with the flowers dangling from the tips of the stems.

Columbine



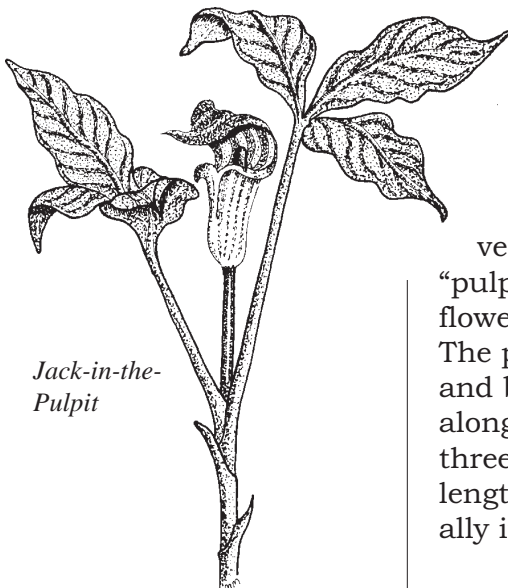
May Apple

May apple (*Podophyllum peltatum*) is easily identified by its large “umbrella” leaves. Younger plants have a single leaf and do not produce a flower or blossom. Older plants have a divided stem and two leaves and produce a showy white flower that attaches at the crotch of the plant stems below the leafy umbrella. The fertilized flower quickly loses its petals and turns to fruit—a berry approximately two inches long which resembles a small “apple.” The fruit is edible but only when fully ripe. As its name implies, blooming, pollination, and the development of the fruit all occur during the month of May.



Sweet William

Sweet William (*Phlox divaricata*), commonly called a “phlox,” has slender flowers, each with five blue-purple petals arranged in loose clusters. The petals are flat, resembling the blades of a propeller. The blossom has a sweet odor and blooms from April to June in Iowa woodlands. Various hybrids of phlox are sold commercially for their beauty, sweet scent, and ability to stabilize slopes and reduce erosion. However, the sweet William that is commonly seen growing in gardens is actually a member of the pink family of plants and is not a phlox.



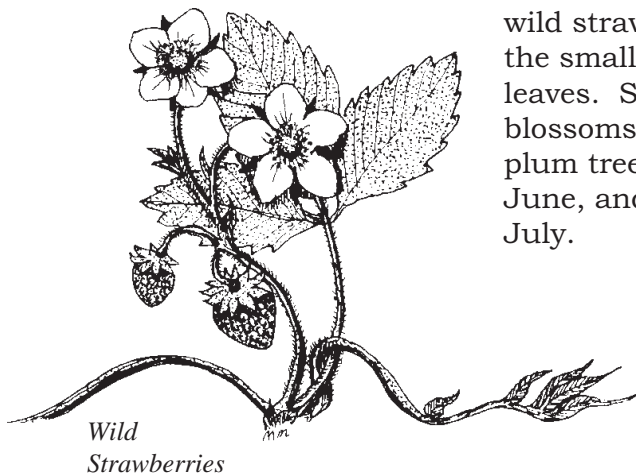
Jack-in-the-Pulpit

Jack-in-the-pulpit (*Arisema triphyllum*) has a very unique appearance. A large leaf forms the “pulpit” which encompasses the fleshy spike of tiny flowers that is rendered as “a preacher named Jack.” The pulpit leaf is usually streaked with green, yellow, and brown colors. One or two large leaves grow alongside the pulpit. These leaves are divided into three large leaflets which may be seven inches in length. The flower blooms from April to June, usually in moist shady woodlands.

Wildflowers of Grasslands and Woodland Edges

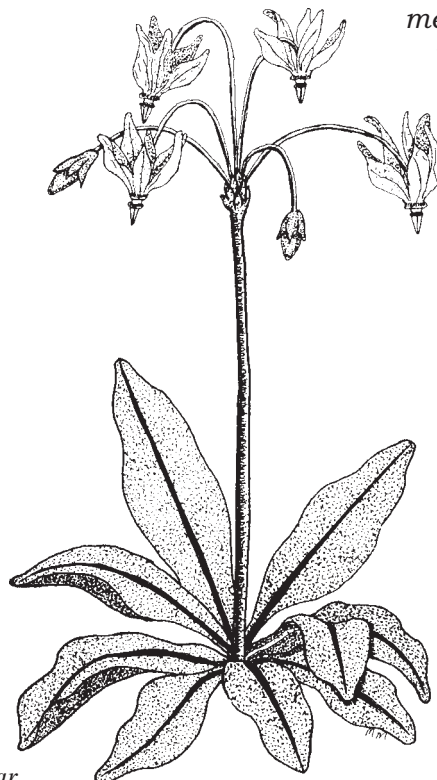
In the grasslands and along woodland edges, many flowers make their first appearances during the late spring and early summer months. Prairie dandelion, pussytoes, golden Alexanders, prairie smoke, lead plant, as well as the flowers described below, all make their first appearances in the later spring months along woodland edges and in Iowa grasslands.

Wild strawberries (*Fragaria virginiana*) grow well in both grasslands and open woodlands. Three oval and sharply toothed leaflets are distinctive of wild strawberry. Clusters of leaves sometimes hide the small white flowers which bloom below the leaves. Strawberries are in the rose family and have blossoms similar to those found on crab apple and plum trees. The blooming period is from April to June, and the delicious fruits develop in June and July.



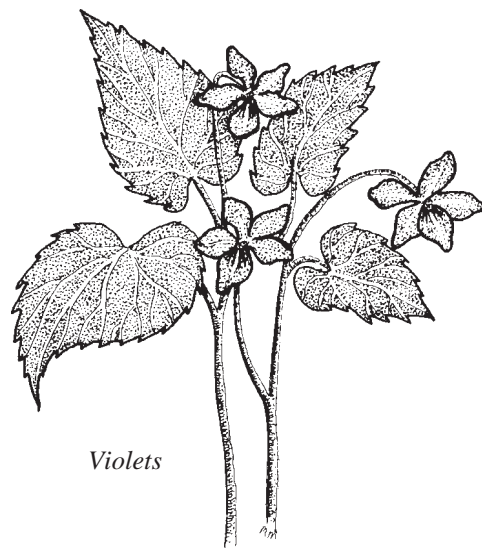
Wild
Strawberries

Shooting star (*Dodecatheon meadia*) gets its name from the way the flower bends, or “shoots,” downward, and from the star-shaped configuration of the pinkish or purple petals. The stamens join together to form the point of the “shooting star.” The location of these flowers can be determined early in spring by looking for a dense rosette of long spatula-shaped leaves. Flowers bloom from April to June in open woodlands and native prairie areas.



Shooting Star

Violets of various species are common wildflowers of woodlands, grasslands, lawns, and disturbed areas. They, along with the non-native dandelion, are often the first flowers to be identified by children. Most species have unique heart-shaped leaves that are quick identifiers of the flowers which may be white, yellow, blue, or violet. An upper pair of petals, two side petals, and one lower petal comprise the unique five petals of the flower. The lower petal acts as a “landing pad” for pollinating insects. Violets may bloom throughout the spring and summer months with the first flowers emerging in April.



Violets



Purple Vetch

Purple vetch (*Vicia americana*) is found in native prairies, roadsides, and other grassland areas throughout Iowa. Long compound leaves with many small leaflets are quick indicators that this plant is a member of the pea family. The petals range in color from blue to purple and have a typical pea appearance with the petals forming upper and lower “lips.” Flowers can be seen blooming throughout the spring and summer months, from May to August.

Human Uses of Iowa Wildflowers

Medicines and Food from Nature

Throughout human history, plants have been used to provide food, medicines, and materials necessary to human survival.

Some historical plant uses are now known to be ill-founded. For example, daisy fleabane received its name due to the belief that the flowers could repel fleas. Columbine was once thought to be useful in making a love potion. And hepatica, because the shape and color of its leaves resemble a liver, was thought to be useful in treating various human liver ailments. Although there is no scientific evidence to support these uses of Iowa's wildflowers, many other uses of wildflowers have been shown to be beneficial.

Remember, caution is required when considering eating any wild plant. Do not eat any plant you can not positively identify as being edible. Carefully research the plant or consult an edible plants expert before eating!

Plants are our main source of medicines. Scientists rely on a diversity of plant species to sift through in their search to find new treatments for disease. For American Indians and early European settlers, hundreds of different wild-growing plants provided the majority of their food, materials, and medicines. For example, the red liquid which gives **bloodroot** its name, although poisonous, was used by Indians as a dye and paint. It was also used topically to treat warts, burns, and other skin maladies and occasionally as an internal medicine. **Hepatica** and **Jack-in-the-pulpit** were used to treat a variety of conditions, including convulsions, asthma, and headaches. In **Wildflowers of Iowa Woodlands**, Sylvan Runkel quotes a Mesquaki medicine man who described the use of hepatica in these words, probably referring to treating convulsions: "When the mouth gets twisted and the eyes get crossed, this root is brewed into a tea and the face is washed until it returns to normal."

Some of Iowa's spring wildflowers are still used in medicines. **May apple** has been studied for cancer treatments, and **goldenseal** has commercial medicinal value.

In addition to medicinal uses, wildflowers have been, and still are, sources of food. There are the obvious **edible fruits** which are the products of the blossoms of Iowa wildflowers—strawberries, black raspberries, gooseberries, and blackberries. But there are many more wild edibles. Beneath the ground, **bulbs, roots, and corms** of plants such as trout lily, ground plum, wild onion, and wild ginger provide foods and flavorings. And violet, dandelion, and bellwort greens can be cooked as **vegetable greens**.

Some plants can be safely eaten only if properly prepared. The underground corms

of **Jack-in-the-pulpit** and **green dragon** are edible, but only after they have been properly boiled.

When eaten raw, the corms contain a high concentration of calcium oxalate which can cause extreme pain in the mouth, illness, or even death.



Beautiful Plants

Although a non-native plant, the common **dandelion** provides a good example of the many food uses for a single wild plant. The leaves may be used in salads and as cooked vegetables. The roots may be roasted and ground for “coffee” or cooked as a vegetable. And the blossom may be breaded and fried like a mushroom. In addition to their food value, dandelions have been used as vitamin C supplements, to increase appetite, as a diuretic, and to relieve some rheumatic disorders.

Although many plants are edible, collecting them is not always a good idea. Overcollecting wildflowers, for food or any other reason, may jeopardize plant populations in the wild.

Over many generations, people have borrowed the secrets of nature to commercially breed flowers for human enjoyment. Our flower gardens are full of plants derived from wildflowers that have been bred for their beauty. But it is important to remember where this beauty originated. The spring beauty of columbine, violets, phlox, bluebells, and other wildflowers was the historic resource used to produce commercial plants. The beauty still exists and blooms freely and annually in Iowa’s natural areas.

Keep in mind that, regardless of their beauty, all wild plants serve as members of natural communities and are therefore important. Excessive gathering of plants for their beauty has endangered some plant species. The showy orchis and yellow ladyslipper were once common spring wildflowers but are now rare, due in part to flower collectors. Please look, smell, and enjoy Iowa’s wildflowers without picking or digging them.



*Hybrid
Columbine*

Viewing Iowa's Spring Wildflowers

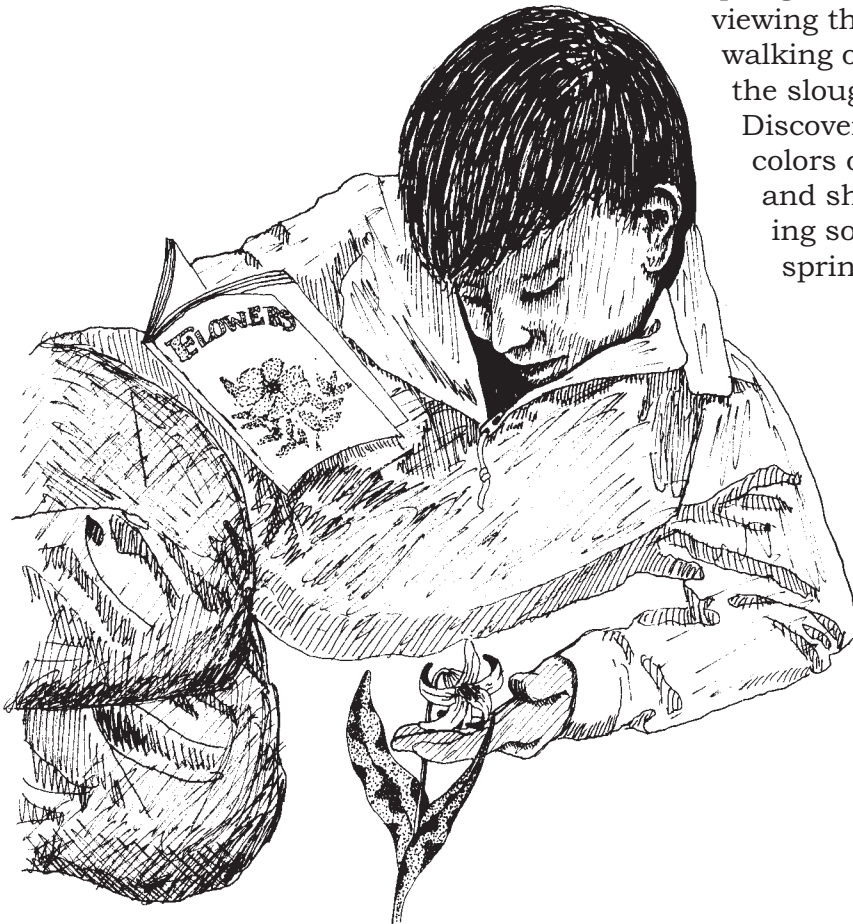
Throughout the spring months and throughout Iowa's natural areas, wildflowers parade their colors. Woodlands are an especially good place to visit to see the spring ephemerals and later spring wildflowers, but wildflowers can also be viewed in wetlands and prairies.

From the first pasque flowers through the coneflowers of summer, prairie wildflowers bloom and fade, only to be replaced by another color and a different blossom waiting to be discovered by a watchful eye. As the ice melts in an Iowa wetland, a rare sighting of skunk cabbage may be followed by the emergence of marsh marigolds, spring cress, and buttercups. And in the quiet waters of slow-moving streams and ponds, the first water lilies and pond lilies begin to bloom in May and June.

Beauty is a functional and necessary characteristic of many wildflowers. The dazzling colors of wildflowers provide enjoyment for people, but they are actually meant to dazzle other critters. Many of these flowers must attract certain insects in order to be successfully pollinated.

Get out of your car and explore the land.

Spring wildflowers are abundant, but viewing them usually requires a little walking on the trail, slogging through the slough, or tramping in the grasses. Discover the renewal of spring in the colors of the flowers. Bring a friend and share the excitement of discovering some of Iowa's beautiful signs of spring.



Useful Resources

“A Field Guide To Wildflowers of Northeastern and North-central North America,” Roger Tory Peterson and Margaret McKenny, 1968.

Iowa State University Extension publications; contact your county extension office.

“Poisonous Plants of the Central United States,” H.A. Stephens, University Press of Kansas, 1980.

“Wild Edible Fruits and Berries,” Marjorie Furlong and Virginia Pill, Naturegraph, 1974.

“Wildflowers of Iowa Woodlands,” Sylvan T. Runkel and Alvin F. Bull, Iowa State University Press, 1979.

“Wildflowers of the Tallgrass Prairie,” Sylvan T. Runkel and Dean Roosa, Iowa State University Press, 1989.

“Wildflowers and Weeds,” Booth Courtney and James Zimmerman, Simon and Schuster, 1972.

Notes

Notes

Notes

Iowa's Spring Wildflowers is one in a series of seven booklets that are part of the *Iowa Plants Series*. The booklets in the series include:

Iowa Plants

Iowa's Spring Wildflowers	(IAN-301)
Iowa's Summer and Fall Wildflowers	(IAN-302)
Benefits and Dangers of Iowa Plants	(IAN-303)
Iowa's Trees	(IAN-304)
Seeds, Nuts, and Fruits of Iowa Plants	(IAN-305)
Iowa's Mushrooms and Other Nonflowering Plants	(IAN-306)
Iowa's Shrubs and Vines	(IAN-307)

The Iowa Association of Naturalists also has produced five other booklet series that provide readers with a clear, understandable overview of topics concerning the Iowa environment and conservation. The booklets included in each of the other five series are listed below.

Iowa Physical Environment Series

Iowa Weather	(IAN-701)
Iowa Geology and Fossils	(IAN-702)
Iowa Soils	(IAN-703)

Iowa Wildlife Series

Iowa Mammals	(IAN-601)
Iowa Winter Birds	(IAN-602)
Iowa Nesting Birds	(IAN-603)
Iowa Reptiles and Amphibians	(IAN-604)
Iowa Fish	(IAN-605)
Iowa Insects and Other Invertebrates	(IAN-606)

Iowa's Natural Resource Heritage

Changing Land Use and Values	(IAN-501)
Famous Iowa Conservationists	(IAN-502)
Iowa's Environmental Laws	(IAN-503)
Conservation Careers in Iowa	(IAN-504)

Iowa Wildlife and People

Iowa Wildlife and Management	(IAN-401)
Keeping Iowa Wildlife Wild	(IAN-402)
Misconceptions About Iowa Wildlife	(IAN-403)
State Symbols of Iowa	(IAN-404)
Iowa Food Webs and Other Interrelationships	(IAN-405)
Natural Cycles in Iowa	(IAN-406)
Iowa Biodiversity	(IAN-407)
Adapting to Iowa	(IAN-408)

Iowa's Biological Communities

Iowa's Biological Communities	(IAN-201)
Iowa Woodlands	(IAN-202)
Iowa Prairies	(IAN-203)
Iowa Wetlands	(IAN-204)
Iowa Waterways	(IAN-205)

Iowa Environmental Issues

Iowa Habitat Loss and Disappearing Wildlife	(IAN-101)
Iowa Air Pollution	(IAN-102)
Iowa Water Pollution	(IAN-103)
Iowa Agricultural Practices and the Environment	(IAN-104)
People, Communities, and Their Iowa Environment	(IAN-105)
Energy In Iowa	(IAN-106)
Iowa Waste Management	(IAN-107)

✓ Booklets may be ordered through the Iowa State University Extension Service at a cost of \$1.00 per booklet. When ordering, be sure to use the IAN number to the right of each listed booklet title. Please send written orders and payment to:

ISU Extension Service

Printing and Publications Building
Iowa State University
Ames, IA 50011
515-294-5247

This publication is printed on recycled paper.

